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Agricultural Engineering

Materials of Agricultural Engineering: Editorial. Agricultural Engineering. V. 14, No. 6. June, 1933, p. 162. Developments during two years of our second quarter century indicate that we are reaching that degree of maturity, in which materials take equal rank with design and its adaptations. Originality is dubious virtue if it conflicts with economics of established production and distribution.

Agriculture

Agricultural investigations at the Huntley (Mont.) field station, 1927-1930. By Dan Hansen, A. E. Seamans and D. V. Koplund. 1933. 50 p. U. S. Department of Agriculture. Technical bulletin No. 353.

Emergency agricultural relief act. Grain and Feed Journals. v. 70. No. 10. May 24, 1933. p. 369-370. Given in full.

Estimated farm costs of producing agricultural products in the Mesilla Valley in 1932. By L. H. Hauter. 1933. 20p. mimeographed. New Mexico College of Agriculture.

Explanation of farm relief plan. By Henry A. Wallace. American Fertilizer. v. 78, No. 6. March 25, 1933. p. 7-8, 24.

Farm bill. By C. J. Bourg. Sugar bulletin v. 11, No. 16. May 15, 1933. p. 3-4.

Farm relief is possible under the New National law. Current Farm Economics. Series 49. v. 6, No. 3. June, 1933. p. 57-63.

Information for prospective applicants for loans for the purpose of refinancing the outstanding indebtedness of agricultural improvement districts under the provisions of section 36, part 4, of the Emergency Farm Mortgage Act of 1933, as amended. June, 1933. Washington, U. S. Government Printing Office, 1933. 9 p. Reconstruction finance corporation. Circular No. 7.

New agricultural policy. Arizona Producer. v. 12, No. 7. June 15, 1933. p. 4-5. Permanent plan to increase farmers buying power embodied in adjustment act.

"New deal" in conservation. By Frank E. Mullen. Outdoor America. v. 11, No. 4. April-May, 1933. p. 4-6. Resume of intimate relationship between agriculture and conservation.



Agriculture (Cont'd)

New farm relief legislation. By Berry H. Akers. Farmer. v. 51, No. 10. May 13, 1933. p. 5-6, 11. What production control debt relief and inflation means.

New federal agricultural credit organization. By Henry Morgenthau, Jr. Current Farm Economics. Series 49. v. 6, No. 3. June 1933. p. 55-57.

New National policy for agriculture. By Henry A. Wallace. Extension Division News. Virginia Polytechnic Institute. v. 15, No. 9. July, 1933. p. 1, 3-4.

Plans for relieving the farm debt situation. By Henry Morgenthau, Jr. Extension Division News. Virginia Polytechnic Institute. v. 15, No. 9. July, 1933. p. 1-3. Lower interest rates; postponement of payments; reducing amount of principal; loans for other purposes; purposes of act; Administration of Act.

This farmer wants to buy. Letter from F. B. Nichols. Printers' Ink. v. 162, No. 10. March 9, 1933. p. 66-69. Farm relief not essentially a political process.

Air Conditioning

Air circulation. By E. V. Hill. Aerologist. v. 9, No. 7. July, 1933. p. 15-18. Air flow through ducts; furnace installation in home; air distribution in room; steam not satisfactory indicator of air currents; radiator effect with split system; air distribution with unit ventilators; how cross beams in ceiling affect air currents; arrangement that causes drafts on back of pupils' heads; effect of air currents on acoustics; air distribution for cooling room; floor and wall registers.

Air conditioning. Ice and cold storage. v. 36, No. 422. May, 1933. p. 80-81. Pertinent points of high temperature refrigeration.

Air conditioning. By H. J. Macintire. Refrigeration. v. 53, No. 6. June, 1933. p. 12-14.

Air conditioning of private homes. By D. W. McLenegan. Electrical Engineering. v. 52, No. 6. June 1933. p. 366-371. Equipment and energy requirements for both complete and partial air conditioning of typical homes in various climates; electrical load that would accrue from widespread use of this type of equipment discussed from standpoint of electrical utilities.

Application of refrigeration to air conditioning. By Bernard C. Oldham. Cold Storage. v. 36, No. 421. April 20, 1933. p. 87, 92. Analyses of oxygen deprivation and CO<sub>2</sub> increment.

Many economies made by using air conditioning in ripening fruits. By James J. Murray. Heating, piping and Air Conditioning. v. 5, No. 7. July 1933. p. 352-353.



## Air Conditioning (Cont'd)

Modern air conditioning. Part 1. By Harold L. Alt. Pencil Points. v. 14, No. 6. June 1933. p. 285-288; 26. Discussion of basic factors.

Science of air conditioning. Ice and Cold Storage. v. 36, No. 422. May 1933. p. 78-79, 88. Efficiency of air washer. Ventilation and cooling of electric motors and generators. Transference of heat.

## Associations

Attention focused on test methods by A. S. H. V. E. in Detroit. Power. v. 77, No. 7. July 1933. p. 354. Circular slide rule for finding pipe sizes in hot water system; comparison of air change and distribution methods; instrument for measuring performance of direct radiators; testing convectors in warm-walled booth, air-cleaning device and effects of artificially ionized air on human beings among subjects considered.

Better housing association formed as permanent organization. Brick and Clay Record. v. 82, No. 6. June 1933. p. 204. Officers. Platform of purposes. Governing council.

Transactions of the American Society of Agricultural Engineers. v. 24 and 25. 1930 and 1931. St. Joseph, Michigan, 1933. 112 p.

## Building Construction

Advantages of tested home building methods. By H. Vandervoot Walsh. Brick and Clay Record. v. 82, No. 6. June 1933. p. 194-196. Truly modern house is one constructed of time-tested materials.

Glass as a building material. By J. M. Weed. Engineering Experiment Station News. Ohio State University. v. 5, No. 3. June 1933. p. 13-14. Hollow block of pressed glass, eight by five inches in area and four inches thick. Each block is cast open, and then closed with flat plate applied under heat. Basic units are clear glass, but thickness of walls and irregularity of surface diffuse light and distant vision. Wall of clear blocks has somewhat appearance of section of letter boxes at post office.

## Conduits

Small concrete works under field service conditions. By J. W. Hay, Structural Engineer. v. 11, No. 4. April 1933. p. 176-178. Culverts.

## Cultivation

Reasons for cultivation. Washington Farmer. v. 68, No. 15. June 29, 1933. p. 2. 1. Conserve moisture. 2. Maintain supply of available nitrogen. 3. Facilitates subsequent irrigating, harvesting, spraying; 4. Aids absorption of moisture. 5. Stimulates growth of beneficial organisms by aerating soil. 6. Facilitates control of orchard pests. 7. Prepares seed bed.



## Dairy Equipment

Milk housing. By H. B. White. University of Minnesota. Agricultural Engineering News Letter No. 15. June 15, 1933.

Milk we drink. By C. H. Vivian. Compressed Air Magazine. v. 38, No. 5. May 1933. p. 4113-4118.

## Dams

Brush dams for ditch control. By Ivan D. Wood. 1930. 7 p. Nebraska Agricultural College, Extension circular No. 727.

Non-slip hydraulic-fill dam for San Diego. By H. N. Savage. Engineering News Record. V. 111, No. 2. July 13, 1933. p. 33-36. Slip and spread of semi-hydraulic fill in El Capitan dam is restrained by concrete toewalls and heavy armoring of riprap. Downstream drainage tunnels provided.

## Engines

Combustion knocks in diesel engines. By P. H. Schweitzer. Power Plant Engineering. v. 37, No. 7. July 1933. p. 310-311. Every factor that causes a gasoline engine to knock is likely to make Diesel engine run smoother.

## Erosion Control

Erosion toll 21 times that of annual crops. Northwest Farm Equipment Journal. v. 47, No. 6. June 1933, p. 28. Plant food taken by crops can be restored in form of fertilizer, but that taken by erosion can not be restored, because this ruinous process takes whole body of soil, plant food and all. Land impoverished strictly by plant food depletion, as sometimes results from continuous growing of clean-tilled crops, is not worn-out land; only worn-out land is that which has been so badly washed by erosion that it would be entirely futile to undertake its reclamation.

New soil-saving machine. Farm Implement News. v. 54, No. 13. June 22, 1933. p. 39. Machine combines ordinary cultivator with set of shovels which dig about 10,000 holes per acre, giving wafflelike appearance to fields. This machine makes it possible to retain approximately 2 inches of rainfall without damage to land from soil washing and with much benefit to crops, especially in regions of light rainfall, through increased storage of moisture.

Proposed system of erosion control. By H. D. Sexton and E. G. Diseker. Agricultural Engineering. v. 14, No. 6. June 1933. p. 150-152. Results of some preliminary studies on use of strip cropping for erosion control, method of running rows to avoid excessive number of short rows and use of machinery on hillside land. Control of soil erosion has very definite relationship to maintenance of soil fertility and to efficient use of farm machinery. However, results of erosion control experiments conducted by Alabama Agricultural Experiment Station have shown that terracing alone will not sufficiently control erosion on cultivated land.



### Erosion Control (Cont'd)

Save the golden band of ocean beaches! By Victor Gelineau. Engineering News Record. v. 110, No. 24. June 15, 1933. p. 765-771. Details of bulkhead and jetty construction of timber pile and crib work, with stone fill. Details of types of seawalls, mostly stone and concrete. Editorial, p. 786-787.

Soil wastage costs billions. Washington Farmer. v. 68, No. 14. June 15, 1933. p. 5. Soil loss measurements indicate that at least 3,000,000,000 tons of soil are washed from our fields and pastures every year. Value of plant food in this wasted soil is estimated at least \$2,000,000,000 based on value of cheapest fertilizers.

### Evaporation

Evaporation from water surfaces. American Society of Civil Engineers. Proceedings. v. 59, No. 2. February 1933. p. 223-268. Symposium consisting of following papers: Evaporation from different types of pans, C. Rohwer; Evaporation from reservoir surfaces, R. Follansbee; Standard equipment for evaporation stations; Final report of sub-committee on evaporation of special committee on irrigation hydraulics.

### Explosives

Hercules dynamite on the farm. Tree planting. Soil blasting. Tree rejuvenation. Other farm uses. Hercules Powder Co. Inc., Wilmington, Delaware. 1933. 51 p.

Use of explosives in the forest. 1933. 32p. Wilmington, Del., Atlas Powder Co. Discusses loading, priming, handling, stumping, rock and boulders, ditching, excavating, soil blasting.

### Extension

Announcement and program of rural life meetings, August 1-4, 1933. Combined meetings of the American Country Life Association, Institute of Rural Affairs, Virginia State Farmers Institute and Virginia Homemakers Association. 1933. 11p. Virginia Polytechnic Institute Bulletin. v. 26, No. 9.

Nineteenth annual report of the extension division, year 1932. 1933. 116 p. Oklahoma Agricultural and Mechanical College. Circular No. 301. Agricultural engineering, p. 29-31.

Statistical results of cooperative extension work, 1932. 1933. 28p. U. S. Department of Agriculture. Extension Service Circular No. 187. Agricultural Engineering, p. 13, 28.



### Farm Buildings and Equipment

Farm building plans. By J. C. Woolley and R. W. Oberlin. 1933. 20 p.  
Missouri. College of Agriculture. Agricultural extension service.  
Circular No. 305.

Modern barn that cost only \$900. Jersey Bulletin. v. 52, No. 26. June  
1933. p. 829. 32 x 72 feet with el 20 x 24 feet.

Sanitary milk houses. Plans and construction details. Chicago, Ill,  
Portland Cement Association. 1933. 8p.

### Farm Machinery and Equipment

Avoid costly field stops. By V. S. Peterson. Successful Farming. v. 30,  
No. 7. July 1933. p. 7, 32. 75 percent of machinery in this county  
is out of adjustment. At least 80 percent of difficulties experienced with  
mowers and binders come as result of faulty adjustment of parts.

Backed-up demand for farm machines. Farm Implement News. v. 54, No. 13.  
June 22, 1933. p. 17. Table gives unit sales of certain farm machines  
1920-1931.

Better values in today's tools. Implement and Tractor Trade Journal.  
v. 48, No. 13. July 1, 1933. p. 6-7. Report of agricultural engin-  
eers indicates extent of improvements in quality and efficiency of twenty-  
five important machines as compared with period of 1910 to 1914.

Calculation of the annual cost of farm machinery and implements. Journal  
of the Royal Agricultural Society of England. v. 33. 1932. p. 45-  
67. Constituents of machinery cost; repairs and renewals; depreciation;  
procedure on the farm; interest on capital; apportionment of machinery costs;  
note on the general economy of machinery.

Cutting cost of corn. Farm Implement News. v. 54, No. 13. June 22, 1933.  
p. 31. Costs figured accurately even to depreciation on machines.

Einbaumotoren fur Gespann - Bindemacher. By Otto Gramm. 1933. 4 p.  
Binder with motor drive.

Header barge method of harvesting. By J. MacGregor Smith and Donald Cameron.  
1933. 26 p. Alberta. University. College of Agriculture.  
Circular No. 14.

How farm machines have cut production cost. Farm Implement News. v. 54,  
No. 14. July 6, 1933. p. 17. Power and machinery on farms caused  
reduction in labor requirements in wheat and corn production of more than  
50 percent in some localities in last 30 years and a considerably higher  
percentage since 1840, according to survey made by Bureau of Agricultural  
Engineering.



Farm Machinery and Equipment (cont'd.)

How many threshers will be sold this year? By L. G. Samsel. Farm Implement News. v. 54, no.13. June 22, 1933. p.34-35. If we tell more farmers advantages of owning a rig, and more about improvements in machines, more will be sold.

Improvement in farm machines. Farm Implement News. v.54, no.14. July 6, 1933. p.18.

Improvement in farm machines since war. Market Growers Journal. v.53, no.1. July 1, 1933. p.224. Advantages: 1. Longer and more productive use. 2. Less replacement of wearing parts. 3. Less loss of time due to failure of machine to function continuously. 4. Less breakage. 5. Increased efficiency. 6. Increased capacity. 7. Improved operating efficiency. 8. Greater operating precision. 9. Less time spent in care of machine. 10. Less time and expense due to accidents. 11. More economical operating devices.

Prove implement values improve. Farm Machinery and Equipment. No. 1794. June 15, 1933. p.3-4. Substantial improvements in quality values of farm implements during past twenty years.

There's a real future for horse-drawn implements. Farm Implement News. v.54, no.13. June 22, 1933. p.28-29. Coming decade will probably mark great increase in interdependence of agriculture and industrial labor. To extent that it develops will shock of depressions of future be softened. Likewise will standard of living of such labor be raised, and opportunities of coming generation bettered.

Farmhouses.

Farm home conveniences and power equipment in Oklahoma. Current Farm Economics. Series 49. v.6, no.3. June 1933. p.77-83.

Fire Protection.

Causes of farm fires. Northwest Farm Equipment Journal. v.48, no.6. June 1933. p.25. Half of farm fires are attributed to lightning; 1/8th from defective chimneys; 7 per cent are started from sparks.

Floods and flood control.

Flood control and water conservation in the south coastal basin of southern California. By George H. Cecil. 1933. 12p. Conservation Association of Los Angeles County, 1151 So. Broadway, Los Angeles.

New plans for the Mississippi general hydraulic phenomena studied with models. Engineering News Record. v.111, no.2. July 13, 1933. p.41-45. Notable experimental work performed on bed-load movement, sediment discharge, erodibility of bed soils, sand transportation, hydraulic effects of cutoffs and life of dredged channels at bars.



Floods and Flood Control. (cont'd.)

New plans for the Mississippi: General review of present program. Engineering News-Record. v.110, no.25. June 22, 1933. p.795-801. As part of undertaking of stabilizing stream, several cutoffs of bends are being made. Elaborate investigations are in progress to clarify problems of hydraulics of flow, movement of detritus, protection of banks and regulation of navigable channel by contraction. Editorial, p.819.

New plans for the Mississippi. River model design and operation. Engineering News-Record. v.111, no.1. July 6, 1933. p.14-17. U. S. Waterways Experiment Station at Vicksburg on the Mississippi River has, in two years of operation, set criteria for technique of river study by models.

New plans for the Mississippi. Straightening by cutoff channels. Engineering News Record. v.110, no.26. June 29, 1933. p.838-842. Hydraulic efficiency of tortuous channels of Mississippi is being improved by series of artificial channels cutting off river loops. Model tests controvert old beliefs as to danger of cutoffs to channel regimen.

Floors.

Developments in wood flooring. By C. Stanley Taylor. Country Life. v.63, no.4. February 1933. p.72.

New shrink-proof framing to avoid sagging floors and plaster cracks. By E. H. Karp. American Builder and Building Age. v.58, no.5. February 1933. p.36-38.

Strength of flat-arch floor construction. Part 1. End spans. By George E. Large and Clyde T. Morris. 1933. 49p. Ohio Engineering Experiment Station. Bulletin No. 78.

Forage Drying.

Chopped hay saves labor and space. By R. C. Miller and E. A. Silver. Implement and Tractor Trade Journal. v.48, no.13. July 1, 1933. p.8,16.

Costs of storing chopped and whole hay. By Frank H. Hamlin and Fred J. Bullock. Agricultural Engineering. v.14, no.6. June 1933. p.147-149. Table gives comparative cost of putting whole and chopped hay into storage. For use on farm, chopping hay for economical storage is cheaper and easier than baling.

Field curing of hay as influenced by plant physiological reactions. By T. N. Jones and L. O. Palmer. Agricultural Engineering. v.14, no.6. June 1933. p.156-158. Role of leaves in dehydration of hay plants.



Fuels.

- Alcohol fuel in farm relief. Oil, Paint and Drug Reporter. v.123, no.19. May 8, 1933. p.17,22-23. General statement; Plan proposed; Technical questions and practical use; Demand already active; Objections refuted; Results of mileage tests; foreign experience; Economic and national policy; New uses vs. reduced production; Wide-spread benefits from fuel alcohol.
- Alcohol-gas blend. Nebraska Farmer. v.75, no.13. June 24, 1933. p.12-A. Objections: increased cost of such motor fuel, compared to its benefits, its decreased efficiency, difficulty of enforcing its use, that it would benefit only part of farmers, difficulty of providing adequate equipment for manufacture of alcohol in view of uncertainty of its use as prices of farm products advance, and actual value of plan to farmers themselves.
- Alcohol-gasoline blends would cause enormous economic losses. By Dr. Gustav Egloff. National Petroleum News. v.25, no.17. April 26, 1933. p.30-32,34. Mechanical and economic objections to this proposed form of farm relief.
- Alky-gas is live issue in Iowa, new bill comes up in August. National Petroleum News. v.25, no.20. May 17, 1933. p.24.
- "Alky-gas" is proposed as amendment to the general revenue bill. By A.E.Heiss. National Petroleum News. v.25, no.18. May 3, 1933. p.11-12,14.
- Alky-gasoline blending proposals dead until next January. National Petroleum News. v.25, no.22. May 31, 1933. p.13.
- A.A.A. tests alcohol fuel. Oil, Paint and Drug Reporter. v.123, no.18. May 1, 1933. p.17,51. Conditions of test; carburetor problems; operating results; increased cost to motorists; difficulties expected.
- A.P.I. on alcoholized fuel. Oil, Paint and Drug Reporter. v.123, no.18. May 1, 1933. p.51,57. Basic economic factor; alcohol cost details; national cost; cost to consumer. Proposal cannot be regarded as anything other than disguised and highly expensive method of burning corn.
- Benzol makes possible alky-gas Cities Service sells abroad. National Petroleum News. v. 25, no.20. May 17, 1933. p.23-24. Use 16 per cent anhydrous alcohol, 9 per cent benzol and 75 per cent gasoline.
- Bureau of Standards men conduct tests on alky-gas blends. National Petroleum News. v.25, no.24. June 14, 1933. p.30.



Fuels. (cont'd.)

Farm consumption of fuel and lubricants. Farm Implement News. v.54,  
no.13. June 22, 1933. p.19.

|                 | Fuel          | Lubricants |
|-----------------|---------------|------------|
| Tractors        | 526,500,000   | 26,300,000 |
| Gas engines     | 90,000,000    | 4,500,000  |
| Combines        | 21,188,000    | 1,059,000  |
| Electric plants | 21,627,000    | 1,081,000  |
| Motor trucks    | 225,000,000   | 11,250,000 |
| Automobiles     | 1,240,500,000 | 46,500,000 |
| Total           | 2,124,815,000 | 90,690,000 |

Farm use of fuel and oil. Implement and Tractor Trade Journal. v.48,  
no.13. July 1, 1933. p.14. More than 2,125,000,000 gal. of  
petroleum fuels, including gasoline, kerosene, and distillate together  
with approximately 90,700,000 gallons of lubricating oils were used on  
farms in the United States in 1930.

Farmers use large supply of petroleum fuels and oils. Farm Machinery  
and Equipment. no.1794. June 15, 1933. p.7. More than  
2,125,000,000 gallons of petroleum fuels, including gasoline, kerosene  
and distillate, together with approximately 90,700,000 gallons of  
lubricating oils were used on farms in United States in 1930, according  
to Bureau of Agricultural Engineering, U. S. Department of Agriculture.  
Gas tractors used 526,500,000 gallons of fuel and 26,300,000 gallons  
of lubricants.

5% alky-gas being tested by Illinois co-ops. National Petroleum News.  
v.25, no.17. April 26, 1933. p.32. Illinois Farm Supply  
Company's test will be with blend containing 5 per cent anhydrous  
alcohol. Tests of 10 per cent blend will be continued in north  
central Illinois by farm bureau oil companies and results compared  
with 5 per cent blend test.

German views on alcoholic gasolines. Automotive Industries. v.68,  
no.18. May 6, 1933, p.549.

Iowa alcohol-gasoline proposal tabled temporarily as idea grips west.  
National Petroleum News. v.25, no.9. March 1, 1933. p.11-12.

Official tests of regular and alcohol-blended gasoline motor fuels.  
Joint Committee report on performance characteristics of these fuels.  
Contest Board of the American Automobile Association, Washington, D.C.  
1933. 34p. mimeographed.

Oil industry to oppose alcohol-gas blends. National Petroleum News.  
v.25, no.17. April 26, 1933. p.34.



Fuels. (cont'd.)

Power alcohol and motor spirit. Australian Sugar Journal. v.25, no.2. May 4, 1933. p.100. Marketed as Shellkol, power alcohol and petrol mixture has had good reception, and exhaustive tests have proved its suitability for all types of cars, trucks and motorcycles. Engines examined after four years' exclusive use of Shellkol were found to be in excellent order, original valves were in good condition, carbon deposit low, and wear in cylinder bores satisfactory. Petrol consumption tests against recognized first-grade petrol have shown increases in economy of from 1.3 per cent to 5.7 per cent in cars, 2.7 per cent in heavy trucks, and 14.3 per cent in our own motorcycle outfit. No adjustments whatsoever were made to vehicles before or during these tests. In car with ignition well advanced Shellkol showed better anti-knock value than four other recognised first-grade petrols obtainable. Starting is easy, and crank-case oil dilution exceptionally low.

Problems for marketers in selling alcohol-gasoline blends. National Petroleum News. v.25, no.21. May 24, 1933. p.32.

Some effects of the compulsory blending of alcohol in motor fuel upon the Louisiana sugar industry. By Wm. L. Owen. Sugar Bulletin. v.11, no.16. May 15, 1933. p.1-3.

Unfairness of alky-gas proposal seen in report to Senate. National Petroleum News. v.25, no.19. May 10, 1933. p.13-14. Discussion of Senate Document No. 57, 73d Congress.

Gates.

Group of seven gates. American Architect. v.143, no.2615. January 1933. p.41-45.

Heating.

Application of the Eupatheoscope for measuring the performance of direct radiators and convectors in terms of equivalent temperature. By A.C. Willard, A. P. Kratz and M. K. Fahnestock. Heating, Piping and Air Conditioning. v.5, no.7. July 1933. p.369-375. Investigation conducted by engineering experiment station of University of Illinois.

Hotbeds.

Electric hotbeds advance profits in vegetables. Electrical World. v.101, no.25. June 24, 1933. p.812. According to tests at Purdue University, electric hotbeds provide better, faster, and more complete germination.

Electric soil heating: 1933 studies. 1933. 16p. National Rural Electric Project, College Park, Maryland. Report no. 8. Surface heat vs under heat; portable knock-down hotbed; surface heat vs cinder insulation; cinder insulation savings; soil slope alters bed temperatures; mats save power; double glazing saves 30%; glass substitutes; wind reduces bed temperatures; thermostat characteristics; thermostats

Hotbeds. (cont'd.)

and cable available.

Some experiments in soil heating. By J. E. Johansson. Journal of the Ministry of Agriculture. v.39. no.12. March, 1933. p.1113-1116.

Houses.

Chicago and tomorrow's house? By Frank Chouteau Brown. Pencil Points. v.14, no.6. June 1933. p.245-251.

Fireproof concrete homes may be built at moderate cost. Concrete. v.41, no.5. May 1933. p.3-4. Plans for fireproof homes. Concrete floors are most important feature.

German government to finance 20,000 small homes. Engineering News Record. v.110, no.26. June 29, 1933. p.833. Unemployment relief.

Houses at a Century of Progress creating new desire for homes. Brick and Clay Record. v.82, no.6. June 1933. p.198-199. Brick house a strong testimonial to sound construction; new designs in homes making existing houses obsolete.

Houses cannot be built like automobiles. By Arthur T. North. American Architect. v.142, no.2614. December 1932. p.18-20.

Log cabins - an expert tells how to build them right. American Builder and Building Age. v.58, no.5. February 1933. p.33,58.

Lumbermen offer a shop-built house for local dealers and builders. By W. F. Shaw. American Builder and Building Age. v.54, no.5. February 1933. p.14-17.

New deal home at the fair. By Joseph C. Folsom. Commerce. v.30, no.6. July 1933. p.18-21,38-39. Eleven model houses show what 1933's ingenuity offers in economy and charm. Cost is small, comfort and convenience great.

New steel houses should be marketed through established building channels. By Bennett Chapple. American Builder and Building Age. v.54, no.5. February 1933. p.18-19,58.

No room for factory-built homes: Editorial. Concrete. v.41, no.4. April 1933. p.11.

Steel in residence construction. By F. T. Llowellyn and F. N. Speller. Architectural Record. v.73, no.6. June 1933. p.439-442. Structural strength; connectibility; durability; protective coatings; enameled sheet steel; synthetic resin surfacings; alloy steels; classification of plates and sheets.



Houses. (cont'd.)

Steel should improve existing methods of home building. L. H. Miller. Brick and Clay Record. v.82, no.2. February 1933. p.58-59. Rather than promoting new types of construction, existing practices of proven value should be made better with steel; use of steel with other materials.

Technological developments in fireproof concrete homes. By W. D. M. Allan and R. E. Copeland. American Concrete Institute, Journal. v.7, no.7-8. March-April 1933. p.351-364. Structural system of concrete house construction; refinements of conventional methods; new variations of unusual methods; concrete house of future.

Houses, Remodeling.

Modernized economically. American Builder and Building Age. v.58, no.5. February 1933. p.40-41.

Proposed home modernizing campaign on nation-wide scale. Concrete. v.41, no.5. May 1933. p.8.

250,000 people saw modernizing demonstrated. By G. Frank Corder. American Architect. v.142, no.2611. September 1932. p.12-13, 98.

Insulation.

Easy to handle insulating material. Automotive Industries. v.68, no.19. May 13, 1933. p.588. Seapak. Except for thin membrane of paper on one side, it consists entirely of kapoc, a hollow silky fiber at pod of coiba tree. Widely used for heat and sound-insulating purposes, being valued on account of its light weight, its resilience, and its moisture resistance.

Insulation on the farm. Report of the subcommittee on insulation on the farm, National Committee on Wood Utilization, Washington. United States Government Printing Office, 1933. 49p.

Insulation statistical board. Refrigerating World. v.68, no.6. June 1933. p.25. Technical committee organized to deal with technical phases of manufacture and use of fibre insulating boards. General functions: 1. acquire and circulate data of technical nature which affects industry. 2. Associate itself with assistance with other societies or technical department of any member company. 3. Study of standards and specifications of insulation board in manufacture and in use. 4. Collect all building codes affecting fibre board industry and report to Bureau with recommendations for action thereon. 5. Keeping contact with various government departments and following government specifications.

Irrigation.

Financial rehabilitation of irrigation and drainage districts. By G. E. P. Smith. 1933. 123-142p. Arizona. Agricultural Experiment Station. Bulletin no. 144.

Four rules for irrigating beets. Through the Leaves. v.21, no.4. July 1933. p.99-104. 1. Do not permit beets to suffer for water at any time. 2. Be ready to irrigate in June. 3. Keep crop growing. 4. Frequent light irrigations are best.

Irrigation needs require study. Washington Farmer. v.68, no.14. June 15, 1933. p.5. Advisable to irrigate according to seasonal conditions as well as according to character of soil.

Studies of irrigation methods for sugar beets in northern Colorado. By H. E. Brewbaker. Through the Leaves. v.21, no.4. July 1933. p.106-109. Practice in which early, frequent and light applications of water are used, is to be preferred to delayed, widely spaced and heavy applications of water.

Two forms of full depth control weirs. By John Roche Kiely. 1933. 34p. Washington. Engineering Experiment Station. Bulletin no.71.

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Agricultural land classification and land types of Michigan. By J. O. Veatch. 1933. 51p. Michigan. Agricultural Experiment Station. Special bulletin no. 231.

Economic study of land utilization in Topkins County, New York, 1930. 1933. 65p. mimeographed. New York State College of Agriculture, Cornell University, Department of Agricultural Economics and Farm Management.

Miscellaneous.

Garden pools give constant pleasure. By Romaine B. Ware. Country Life. v.63, no.4. February 1933. p.55,73,76.

How to make a cardboard model. By W. F. Silliman. American Architect. v.142, no.2614. December 1932. p.22-23.

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Miscellaneous. (cont'd.)

New partnership of government and business. By Theodore M. Knappen.  
Magazine of Wall Street. v.52, no.3. May 27, 1933. p.106-  
108,144. Effects on business stability, profits, and securities.

Recent areal subsidence found in releveling. By Howard S. Rappleye.  
Engineering News Record. v.110, no.26. June 29, 1933. p.845.  
Changes in elevation of as much as 4 ft. since 1920 discovered over  
large area centering on San Jose, Calif., by precise levels just  
completed, with all indications that subsidence is still continuing.

Regional planning commissions or organization in the United States.  
1933. 19p. mimeographed. U. S. Bureau of Standards,  
Washington, D. C.

Should we try a partnership of business and government? By Don  
Blanchard. Automotive Industries. v.68, no.19. May 13,  
1933. p.586-587. Views of industrial leaders and attitude  
of the administration.

Moisture.

Future of moisture conservation. By Ivan D. Wood. Agricultural  
Engineering. v.14, no.6. June 1933. p.152. Excerpt.  
Future developments in field of moisture conservation will come  
with further development of terrace and of contour farming. There  
will come developments in machines, use of which will prepare soil  
surfaces to prevent practically all run-off and check at least  
some surface evaporation which cost so heavily.

Summer cultivation conserves soil moisture. By E. R. Parsons.  
Western Farm Life. v.25, no.6. June 15, 1933. p.3,14.  
Duck-foot blades leaving cloddy surface best for plains farms.

Motors.

Selecting the motor to fit the need. By H. J. Gallagher.  
Electricity on the Farm. v.6, no.7. July 1933. p.8-9.  
More economical to have most of farm jobs done with small motors  
operating over longer periods of time than to rush job with large  
motors.

Pipes and Piping.

Coefficients of discharge of orifices in various-sized pipe line.  
By Prof. S. R. Beitler. Engineering Experiment Station News.  
Ohio State University. v.5, no.3. June 1933. p.1-2,13.

Graphic solution of some common pipe bends. By Samuel Kameros.  
Heating, Piping and Air Conditioning. v.5, no.7. July 1933.  
p.342-346. Right-angle bend; simple U-bend; zee bend; expansion  
U-bend-equilateral type; expansion U-bend-optimum type.



### Pipes and Piping. (cont'd.)

Pipe sizes for determining the sizes of pipes and of restricting orifices in a hot-water heating system. By L. A. Cherry.  
Heating, Piping and Air Conditioning. v.5, no.7. July 1933.  
p.381-388. Description of device; Method pursued in design;  
Calculation of two-pipe upfeed direct return gravity system;  
Calculation of typical riser; Chart of pressure heads.

### Potatoes.

Commercial potato production in West Virginia. By K. C. Westover.  
1933. 28p. West Virginia. Agricultural Experiment Station.  
Circular no. 63. Cross section of storage pit, p.28.

### Poultry Houses and Equipment.

Filling the egg basket. By Prof. William C. Sanctury. New England  
Homestead. v.106, no.10. May 13, 1933. p.11-13. Ventila-  
tion and insulation of poultry houses.

Homemade brick stove for brooder. Farm and Ranch. v.52, no.10.  
May 15, 1933. p.13. Laying brick; Flue; Fuel door; Fuel;  
Materials required.

### Power.

Power and machinery in agriculture. By W. M. Hurst and L. M. Church.  
1933. 39p. U. S. Department of Agriculture. Miscellaneous  
Publication no. 157.

Use of power machinery: Editorial. Building Material Digest. v.2,  
no.6. June 1933. p.23-24.

### Public Works.

Cooperation for recovery begins: Editorial. Engineering News Record.  
v.110, no.24. June 15, 1933. p.787. Bill does two things:  
1. Authorizes and directs construction of public works of federal,  
state, and local governments up to \$3,300,000,000; 2. Authorizes  
and directs industrial concerns to cooperate to end of increasing em-  
ployment and wage income, and for this purpose it provides powerful  
means of enforcement, subject only to limitation that monopolistic  
practices must be avoided.

Industrial recovery act passed by Congress. Engineering News-Record.  
v.110, no.25. June 22, 1933. p.814-817. Public works section  
is changed slightly from that of original bill. Total remains at  
\$3,300,000,000, with highways scheduled to receive \$400,000,000, forest  
and park roads \$50,000,000, and "subsistence homesteads" \$25,000,000.

Policies formulated for public works under recovery act. Engineering  
News Record. v.111, no.1. July 6, 1933. p.24. Local  
approval required; Interest rate set; Construction contracts; Labor  
policies.



### Pumps and Pumping.

Self-priming pumps simplify automatic pumping. Power. v.77, no.7. July 1933. p.370-372. Describes six types of pumps that have self-priming feature incorporated in them.

### Rain and Rainfall.

Rainfall and crop yields. By I. Gutmann. Civil Engineering. no.6. June 1933. p.326-329. Testing correlation between crop yields and total annual rainfall; statistical analysis of 56 year rainfall and crop yield records of Rothamsted experimental station in England, showing practically no correlation; review of factors, other than rainfall, influencing crop production; study of long crop yield records of Spanish missions in California showing discordant indications of various crops grown simultaneously in same locality.

### Reclamation.

Modern meaning of reclamation. Editorial. Agricultural Engineering. v.14, no.5. May 1933. p.136.

### Refrigeration.

Changes occurring during freezing storage and thawing of fruits and vegetables. By M. A. Joslyn and G. L. Marsh. 1933. 40p. California Agricultural Experiment Station. Bulletin no.551.

Cold facts. By B. Gartrell Danner. 1933. 23p. Georgia. University. State College of Agriculture. Bulletin no. 433.

Frigol: New refrigerating medium. Cold Storage. v.36, no.420. March 16, 1933. p.54. Non-corrosive substitute for calcium chloride brine. Clean, gives off no odor, no stickiness and not injurious to clothing or to person. Initial cost is approximately double that of calcium chloride brine, it will undoubtedly prove more economical in long run on account of lower maintenance costs and elimination of replace costs through evaporation.

Household refrigeration: Partial list of references. 1933. 33p. mimeographed. U. S. Department of Agriculture. Bureau of Home Economics. Home Economics bibliography no. 5.

Keep cooling tank full. By J. H. Frandsen. New England Homestead. v.106, no.10. May 13, 1933. p.10. Water level should be as high as milk line.

Drange refrigeration in transit. By C. W. Mann and W. C. Cooper. California Citrograph. v.18, no.7. May 1933. p.191,202-203.

## Research.

Government research. By C. J. Bourg. Sugar Bulletin. v.11,  
no.16. May 15, 1933. p.4-6.

## Silos.

Cement gun method of silo repair. By S. A. Witzel. Agricultural  
Engineering. v.14, no.6. June 1933. p.155.

Silo wall protective coatings. By G. F. Steigerwalt. Agricultural  
Engineering. v.14, no.6. June 1933. p.154-155.

Preservative treatments for silo walls. By F. C. Fenton. Agricultural  
Engineering. v.14, no.6. June 1933. p.153-154.

Portland cement washes; Portland cement wash with iron filings; Tar  
coatings; Concrete hardener; Sodium silicate (water glass); Concrete  
paint; Aluminum foil; Synthetic resin (cumar); Liquid rubber.

Trench silo in Kentucky. By F. G. Wiedich. Hoard's Dairyman.  
v.78, no.9. May 10, 1933. p.180.

## Soils.

Classification and evaluation of the soils of western San Diego county.  
By R. Earl Storie. 1933. 4lp. California. Agricultural  
Experiment Station. Bulletin no. 552.

Composition and distribution of phosphate rock with special reference  
to the United States. By K. D. Jacob and others. 1933. 90p.  
U. S. Department of Agriculture, Technical bulletin no.364.

## Specifications.

Many new specifications adopted at A. S. T. M. meeting. Engineering  
News Record. v.111, no.1. July 6, 1933. p.18-20. Cast-  
iron, brick masonry, steel, wrought-iron and road materials receive  
major consideration.

## Spraying and Dusting.

Spraying and dusting potatoes in Michigan. By H. C. Moore and E. J.  
Wheeler. 1933. 23p. Michigan Agricultural Experiment  
Station. Special bulletin no. 234.

## Storage.

Grain storage that pays. By H. J. Barre and Fred C. Fenton.  
Successful Farming. v.30, no.7. July 1933. p.10,12. Many  
farm buildings prove unsatisfactory, not because of materials used,  
but on account of incorrect usage of materials.

## Terracing.

Rains didn't wash terraced corn. By Henry Hatch. Kansas Farmer.  
v.71, no.11. June 5, 1933. p.9.



Terracing. (cont'd.)

Soil erosion: Editorial. Nebraska Farmer. v.75, no.13. June 24, 1933. p.4. Land appraisers for certain mortgage companies have stated that terracing of farm land adds \$8 per acre to its value for loan purposes. Terracing is recognized as positive control of erosion and as means of conserving rainfall.

Terracing for idle acres: Editorial. Agricultural Engineering. v.14, no.6. June 1933. p.162. If we are to have planned national economy, and reduction of tilled acreage is to be part of it, any subsidy on idle land should surely be conditioned on permanent protection of that land - or other land on same farm - from eternal destruction by erosion.

Tires.

Facts on truck tires to reduce costs. Wisconsin Agriculturist and Farmer. v.60, no.12. June 10, 1933. p.10. Under-inflation and overload; alignment.

Rubber tires and steel wheels for tractors. By Lloyd W. Hurlbut. Farm Implement News. v.54, no.14. July 6, 1933. p.12-13. Summary of results of test: 1. For any given engine horsepower greater drawbar horsepower was obtained with rubber tires than with steel wheels and lugs. 2. With rubber tires, maximum drawbar pulls in low, second, and high gear are nearly same. 3. Steel wheels and lugs had advantage in both drawbar pull and speed in low and second gear. In high gear, steel had advantage in speed up to drawbar pull of 1250 lbs. Tubber tires had considerable advantage in drawbar pull with maximum pull of 2190 lbs. in high gear. 4. Maximum drawbar pull for rubber tires was 2230 lbs. in second gear. For steel wheels and lugs it was 3200 lbs. in low gear. 5. Rubber equipment showed better fuel economy based on drawbar horsepower. High gear with rubber showed maximum fuel economy. 6. Maximum drawbar horsepower developed with rubber tires was in high gear. Maximum with steel wheel was in low gear. 7. Direction to best fuel economy with rubber tires is higher speeds with drawbar pull remaining nearly constant. Summary of observation tests: 1. Traction in mud of rubber tires, without chains, on tractor is similar to that of automobile or truck. 2. Tubber tires equipped with lug type chains will pull as much as steel wheels and lugs on dry soil and more in muddy conditions. 3. Tractor relieved of severe jarring impacts. 4. Rubber tires have good traction, but showed tendency to pack soil.

What dealer and farmer say about air-tired tractors. Farm Implement News. v.54, no.13. June 22, 1933. p.20-21. Table gives air tire tractor change-over recommendations. Also farm tractor tire data and dimensions.



### Tractors.

Are we coming to high compression tractor engines? By P. M. Heldt.  
Automotive Industries. v.68, no.18. May 6, 1933. p.556-558.

Great promise in the tractor prospect. Farm Implement News. v.54,  
no.13. June 22, 1933. p.30-31. Under certain conditions and  
acresages, only largest tractor units permit low cost wheat production.  
Both tractors and horses have place in general farming sections.

Hero's a tractor speed record. Farm Implement News. v.54, no.13.  
June 22, 1933. p.22. Air-tired machine sets AAA certified record  
of 35.4 m.p.h. on one-mile dirt track.

Tractor speed record - 35.4 M.P.H. Implement and Tractor Trade  
Journal. v.48, no.13. July 1, 1933. p.9. Allis-Chalmers  
standard 4-speed unit equipped with air tires sets high mark on dirt  
track. Certified by A.A.A.

### Trucks.

Motor truck marketing of Michigan livestock. By G. N. Motts.  
1933. 28p. Michigan. Agricultural Experiment Station  
Special bulletin no. 235.

### Walls.

How to avoid cracks over doors and windows in masonry walls. By Charles  
C. Hurlbut. American Architect. v.142, no.2614. December  
1932. p.38-40,83. Stiffness rather than mere strength is con-  
trolling factor.

Leaky brick walls and how to prevent them. American Builder and  
Building Age. v.58, no.5. February 1933. p.30-32,58. Con-  
clusions from tests: 1. Water does not soak through brick or through  
mortar, but enters through openings and cracks between brick and  
mortar where close bond does not exist. 2. No particular type of  
mortar causes leaky walls. 3. No particular kind of brick causes  
leaky walls. Recommended precautions: 1. Good workmanship. 2.  
Proper design. 3. Select proper type of mortar joint. 4. Careful  
selection of brick and mortar materials.

### Waste Products.

Utilization of agricultural wastes and surpluses. By Lionel K.  
Arnold. 1933. 31p. Iowa State College. Engineering Ex-  
tension Service. Bulletin no. 113.

### Water Power.

Let the water do the running. By C. D. Leiter. New England Home-  
stead. v.106, no.10. May 13, 1933. p.3. Mechanical power  
will deliver it tirelessly, cheaply, efficiently.





